UNICAST AND MULTICAST STREAMING SERVICES OVER LTE

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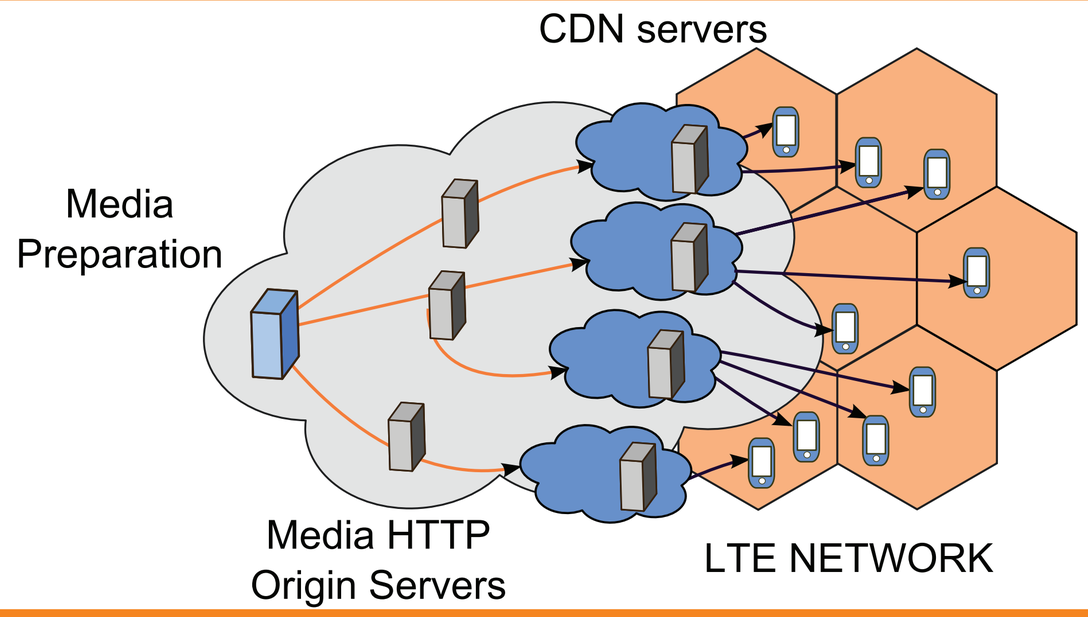
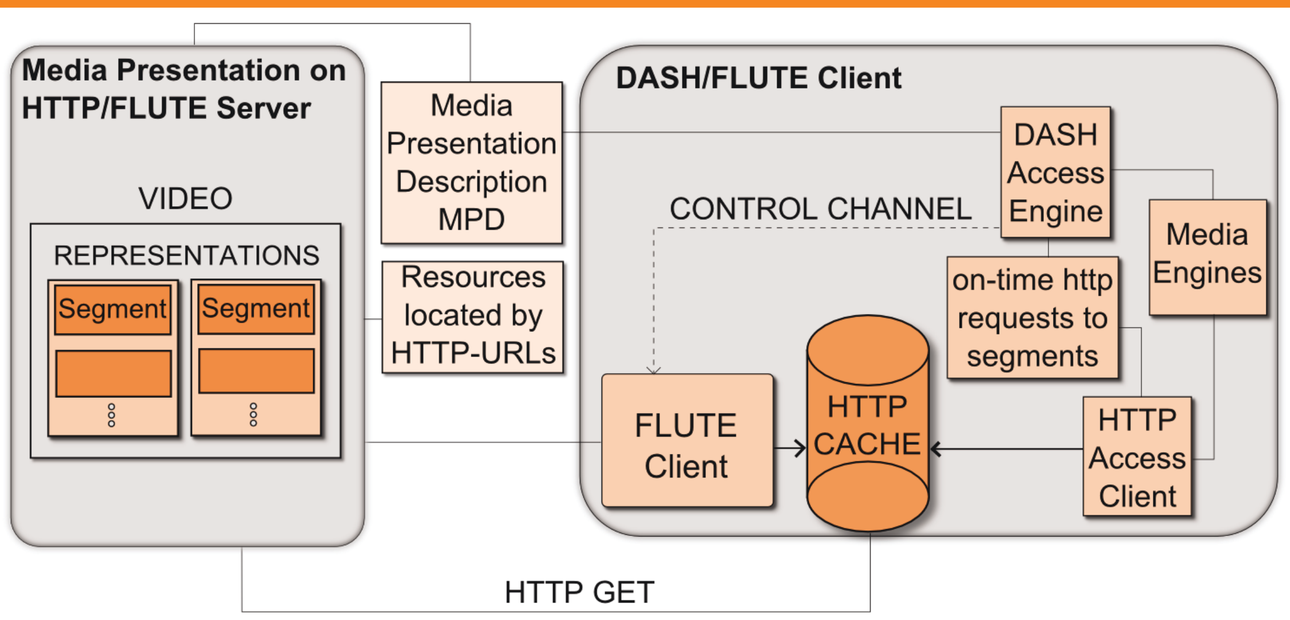
DYNAMIC ADAPTIVE STREAMING OVER HTTP (DASH)

The 3GPP has selected DASH as the standard for multimedia streaming over LTE. DASH works on top of HTTP allowing a video streaming client to adapt to the network conditions by switching between different video representations of the same content encoded with different qualities. A representation consist of small video fragments, also known as ”segments”, that can be replicated on Content Delivery Network (CDN) servers in order to improve the scalability of the solution.



MULTICAST STREAMING OVER LTE MBMS

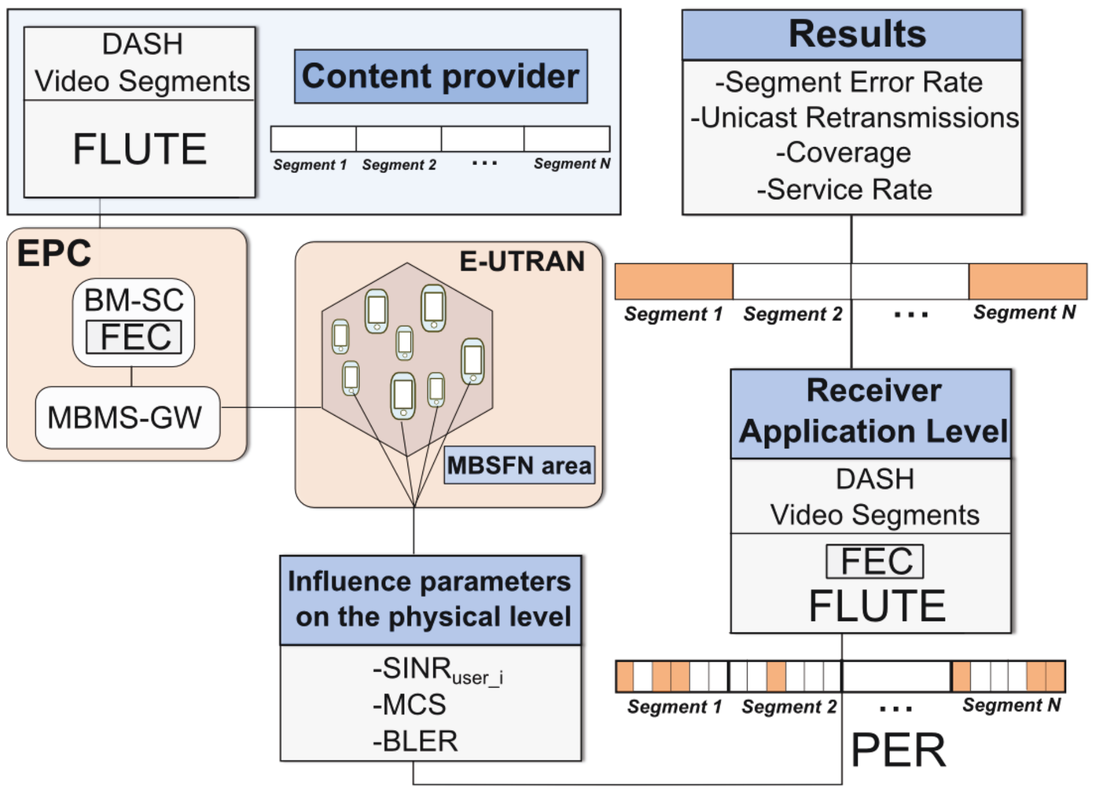


While DASH is based on HTTP, it has also been adapted to be used in a multicast streaming scenario in LTE. The solution consists of mapping the DASH segments to FLUTE objects that can be transmitted to the session participants over MBMS. Segments that are not received correctly over MBMS can be requested using HTTP. Using an HTTP cache to store the segments received over MBMS, the solution can be transparent to the DASH client.

FEC TECHNIQUES OVER LTE MBMS

Due to the characteristics of the radio channel, Forward Error Correction (FEC) techniques are applied at the physical layer in LTE. Additionally, in a multimedia broadcast scenario, in which channel conditions are different for each receiver, FEC techniques are also used at the application level (AL-FEC).

Combining **simulations** to characterise the packet error rate for different users and a **mathematical model** to obtain the impact of the packet error rate on the AL-FEC, we developed the **tools and methodology to analyse the deployment of a video streaming service over an LTE network area**.



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